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S19	1	("5642520").PN.	US-PGPUB; USPAT	OR	OFF	2006/02/16 18:21
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S23	5	704/9.ccls. and discour\$4 near1 pars\$3	US-PGPUB; USPAT	OR	OFF	2006/02/16 18:48
S24	952	704/9.ccls. automatic\$7 near1 learn\$5 with pars\$3	US-PGPUB; USPAT	OR	OFF	2006/02/16 18:49
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1 [Statistical decision-tree models for parsing](#)

David M. Magerman

 June 1995 **Proceedings of the 33rd annual meeting on Association for Computational Linguistics**

Publisher: Association for Computational Linguistics

Full text available: pdf(718.41 KB)


[Publisher Site](#)

 Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

Syntactic natural language parsers have shown themselves to be inadequate for processing highly-ambiguous large-vocabulary text, as is evidenced by their poor performance on domains like the Wall Street Journal, and by the movement away from parsing-based approaches to text-processing in general. In this paper, I describe SPATTER, a statistical parser based on decision-tree learning techniques which constructs a complete parse for every sentence and achieves accuracy rates far better than any pu ...

2 [Statistical and learning methods II: Decision tree parsing using a hidden derivation model](#)

F. Jelinek, J. Lafferty, D. Magerman, R. Mercer, A. Ratnaparkhi, S. Roukos

 March 1994 **Proceedings of the workshop on Human Language Technology HLT '94**

Publisher: Association for Computational Linguistics

Full text available: pdf(586.81 KB)

 Additional Information: [full citation](#), [abstract](#), [references](#)

Parser development is generally viewed as a primarily linguistic enterprise. A grammarian examines sentences, skillfully extracts the linguistic generalizations evident in the data, and writes grammar rules which cover the language. The grammarian then evaluates the performance of the grammar, and upon analysis of the errors made by the grammar-based parser, carefully refines the rules, repeating this process, typically over a period of several years.

3 [Head-Driven Statistical Models for Natural Language Parsing](#)

Michael Collins

 December 2003 **Computational Linguistics**, Volume 29 Issue 4

Publisher: MIT Press

Full text available: pdf(633.30 KB)

 Additional Information: [full citation](#), [abstract](#)

This article describes three statistical models for natural language parsing. The models extend methods from probabilistic context-free grammars to lexicalized grammars, leading to approaches in which a parse tree is represented as the sequence of decisions

corresponding to a head-centered, top-down derivation of the tree. Independence assumptions then lead to parameters that encode the X-bar schema, subcategorization, ordering of complements, placement of adjuncts, bigram lexical dependencies, ...

4 Three generative, lexicalised models for statistical parsing

Michael Collins

July 1997 **Proceedings of the 35th annual meeting on Association for Computational Linguistics , Proceedings of the eighth conference on European chapter of the Association for Computational Linguistics**

Publisher: Association for Computational Linguistics , Association for Computational Linguistics

Full text available:  pdf(666.54 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

 [Publisher Site](#)


In this paper we first propose a new statistical parsing model, which is a generative model of lexicalised context-free grammar. We then extend the model to include a probabilistic treatment of both subcategorisation and wh-movement. Results on Wall Street Journal text show that the parser performs at 88.1/87.5% constituent precision/recall, an average improvement of 2.3% over (Collins 96).

5 A fully statistical approach to natural language interfaces

Scott Miller, David Stallard, Robert Bobrow, Richard Schwartz

June 1996 **Proceedings of the 34th annual meeting on Association for Computational Linguistics**

Publisher: Association for Computational Linguistics

Full text available:  pdf(516.00 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

 [Publisher Site](#)

We present a natural language interface system which is based entirely on trained statistical models. The system consists of three stages of processing: parsing, semantic interpretation, and discourse. Each of these stages is modeled as a statistical process. The models are fully integrated, resulting in an end-to-end system that maps input utterances into meaning representation frames.

6 An information-theory-based feature type analysis for the modelling of statistical parsing

Sui Zhifang, Zhao Jun, Dekai Wu

October 2000 **Proceedings of the 38th Annual Meeting on Association for Computational Linguistics ACL '00**

Publisher: Association for Computational Linguistics

Full text available:  pdf(92.72 KB)

Additional Information: [full citation](#), [abstract](#), [references](#)

The paper proposes an information-theory-based method for feature types analysis in probabilistic evaluation modelling for statistical parsing. The basic idea is that we use entropy and conditional entropy to measure whether a feature type grasps some of the information for syntactic structure prediction. Our experiment quantitatively analyzes several feature types' power for syntactic structure prediction and draws a series of interesting conclusions.

7 Special issue on machine learning approaches to shallow parsing: Memory-based shallow parsing

Erik F. Tjong Kim Sang

March 2002 **The Journal of Machine Learning Research**, Volume 2

Publisher: MIT Press

Full text available:  pdf(247.56 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

We present memory-based learning approaches to shallow parsing and apply these to five tasks: base noun phrase identification, arbitrary base phrase recognition, clause detection, noun phrase parsing and full parsing. We use feature selection techniques and system combination methods for improving the performance of the memory-based learner. Our approach is evaluated on standard data sets and the results are compared with that of other systems. This reveals that our approach works well for base ...

Keywords: feature selection, memory-based learning, shallow parsing, system combination

8 Statistical parsing with an automatically-extracted tree adjoining grammar

David Chiang

October 2000 **Proceedings of the 38th Annual Meeting on Association for Computational Linguistics ACL '00**

Publisher: Association for Computational Linguistics

Full text available:  pdf(227.22 KB) Additional Information: [full citation](#), [abstract](#), [references](#)

We discuss the advantages of lexicalized tree-adjoining grammar as an alternative to lexicalized PCFG for statistical parsing, describing the induction of a probabilistic LTAG model from the Penn Treebank and evaluating its parsing performance. We find that this induction method is an improvement over the EM-based method of (Hwa, 1998), and that the induced model yields results comparable to lexicalized PCFG.

9 Supertagging: an approach to almost parsing

Srinivas Bangalore, Aravind K. Joshi

June 1999 **Computational Linguistics**, Volume 25 Issue 2

Publisher: MIT Press

Full text available:  pdf(1.84 MB)  Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)
[Publisher Site](#)


In this paper, we have proposed novel methods for robust parsing that integrate the flexibility of linguistically motivated lexical descriptions with the robustness of statistical techniques. Our thesis is that the computation of linguistic structure can be localized if lexical items are associated with rich descriptions (supertags) that impose complex constraints in a local context. The supertags are designed such that only those elements on which the lexical item imposes constraints appear with ...

10 Specialized parsing and grammar induction: Active learning for statistical natural language parsing

Min Tang, Xiaoqiang Luo, Salim Roukos

July 2001 **Proceedings of the 40th Annual Meeting on Association for Computational Linguistics ACL '02**

Publisher: Association for Computational Linguistics

Full text available:  pdf(241.10 KB) Additional Information: [full citation](#), [abstract](#), [references](#)

It is necessary to have a (large) annotated corpus to build a statistical parser. Acquisition of such a corpus is costly and time-consuming. This paper presents a method to reduce this demand using active learning, which selects what samples to annotate, instead of annotating blindly the whole training corpus. Sample selection for annotation is based upon "representativeness" and "usefulness". A model-based distance is proposed to measure the difference of two sentences and their most likely pars ...

11 Immediate-head parsing for language models

Eugene Charniak

July 2001 **Proceedings of the 39th Annual Meeting on Association for Computational**

Linguistics ACL '01**Publisher:** Association for Computational LinguisticsFull text available:  [pdf\(83.87 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#)

We present two language models based upon an "immediate-head" parser --- our name for a parser that conditions all events below a constituent c upon the head of c . While all of the most accurate statistical parsers are of the immediate-head variety, no previous grammatical language model uses this technology. The perplexity for both of these models significantly improve upon the trigram model base-line as well as the best previous grammar-based language model. For the better of our ...

12 [Using decision trees to construct a practical parser](#)

Masahiko Haruno, Satoshi Shirai, Yoshifumi Ooyama

August 1998 **Proceedings of the 17th international conference on Computational linguistics - Volume 1 , Proceedings of the 36th annual meeting on Association for Computational Linguistics - Volume 1****Publisher:** Association for Computational Linguistics , Association for Computational LinguisticsFull text available:  [pdf\(635.46 KB\)](#)Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#) [Publisher Site](#)

This paper describes novel and practical Japanese parsers that uses decision trees. First, we construct a single decision tree to estimate modification probabilities; how one phrase tends to modify another. Next, we introduce a boosting algorithm in which several decision trees are constructed and then combined for probability estimation. The two constructed parsers are evaluated by using the EDR Japanese annotated corpus. The single-tree method outperforms the conventional Japanese stochastic m ...

13 [A new statistical parser based on bigram lexical dependencies](#)

Michael John Collins

June 1996 **Proceedings of the 34th annual meeting on Association for Computational Linguistics****Publisher:** Association for Computational LinguisticsFull text available:  [pdf\(737.31 KB\)](#)Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#) [Publisher Site](#)

This paper describes a new statistical parser which is based on probabilities of dependencies between head-words in the parse tree. Standard bigram probability estimation techniques are extended to calculate probabilities of dependencies between pairs of words. Tests using Wall Street Journal data show that the method performs at least as well as SPATTER (Magerman 95; Jelinek et al. 94), which has the best published results for a statistical parser on this task. The simplicity of the approach me ...

14 [Papers: Three new probabilistic models for dependency parsing: an exploration](#)

Jason M. Eisner

August 1996 **Proceedings of the 16th conference on Computational linguistics - Volume 1****Publisher:** Association for Computational LinguisticsFull text available:  [pdf\(600.06 KB\)](#)Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)


After presenting a novel $O(n^3)$ parsing algorithm for dependency grammar, we develop three contrasting ways to stochasticize it. We propose (a) a lexical affinity model where words struggle to modify each other, (b) a sense tagging model where words fluctuate randomly in their selectional preferences, and (c) a generative model where the speaker fleshes out each word's syntactic and conceptual structure without regard to the implications for the hearer. We also give preli ...

What is the minimal set of fragments that achieves maximal parse accuracy?

Rens Bod

July 2001 **Proceedings of the 39th Annual Meeting on Association for Computational Linguistics ACL '01**

Publisher: Association for Computational Linguistics


Full text available:  [pdf\(69.87 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#)

We aim at finding the minimal set of fragments which achieves maximal parse accuracy in Data Oriented Parsing. Experiments with the Penn Wall Street Journal treebank show that counts of almost arbitrary fragments within parse trees are important, leading to improved parse accuracy over previous models tested on this treebank (a precision of 90.8% and a recall of 90.6%). We isolate some dependency relations which previous models neglect but which contribute to higher parse accuracy.

16 Statistical language modeling: Towards history-based grammars: using richer models for probabilistic parsing

Ezra Black, Fred Jelinek, John Lafferty, David M. Magerman, Robert Mercer, Salim Roukos
February 1992 **Proceedings of the workshop on Speech and Natural Language HLT '91**

Publisher: Association for Computational Linguistics

Full text available:  [pdf\(542.55 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#)



We describe a generative probabilistic model of natural language, which we call HBG, that takes advantage of detailed linguistic information to resolve ambiguity. HBG incorporates lexical, syntactic, semantic, and structural information from the parse tree into the disambiguation process in a novel way. We use a corpus of bracketed sentences, called a Tree-bank, in combination with decision tree building to tease out the relevant aspects of a parse tree that will determine the correct parse of a ...

17 Trigger-pair predictors in parsing and tagging

Ezra Black, Andrew Finch, Hideki Kashioka

August 1998 **Proceedings of the 17th international conference on Computational linguistics - Volume 1 , Proceedings of the 36th annual meeting on Association for Computational Linguistics - Volume 1**

Publisher: Association for Computational Linguistics , Association for Computational Linguistics

Full text available:  [pdf\(696.41 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#)
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In this article, we apply to natural language parsing and tagging the device of trigger-pair predictors, previously employed exclusively within the field of language modelling for speech recognition. Given the task of predicting the correct rule to associate with a parse-tree node, or the correct tag to associate with a word of text, and assuming a particular class of parsing or tagging model, we quantify the information gain realized by taking account of rule or tag trigger-pair predictors, i.e ...

18 Learning parse and translation decisions from examples with rich context

Ulf Hermjakob, Raymond J. Mooney

July 1997 **Proceedings of the 35th annual meeting on Association for Computational Linguistics , Proceedings of the eighth conference on European chapter of the Association for Computational Linguistics**

Publisher: Association for Computational Linguistics , Association for Computational Linguistics

Full text available:  [pdf\(708.44 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)
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We present a knowledge and context-based system for parsing and translating natural language and evaluate it on sentences from the Wall Street Journal. Applying machine learning techniques, the system uses parse action examples acquired under supervision to

generate a deterministic shift-reduce parser in the form of a decision structure. It relies heavily on context, as encoded in features which describe the morphological, syntactic, semantic and other aspects of a given parse state.

19 Session: New models for improving supertag disambiguation

John Chen, Srinivas Bangalore, K. Vijay-Shanker

June 1999 **Proceedings of the ninth conference on European chapter of the Association for Computational Linguistics**

Publisher: Association for Computational Linguistics

Full text available:  [pdf\(780.70 KB\)](#)



[Publisher Site](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)


In previous work, supertag disambiguation has been presented as a robust partial parsing technique. In this paper we present two approaches: contextual models, which exploit a variety of features in order to improve supertag performance, and class-based models, which assign sets of supertags to words in order to substantially improve accuracy with only a slight increase in ambiguity.

20 Intonational boundaries, speech repairs and discourse markers: modeling spoken dialog

Peter A. Heeman, James F. Allen

July 1997 **Proceedings of the 35th annual meeting on Association for Computational Linguistics , Proceedings of the eighth conference on European chapter of the Association for Computational Linguistics**

Publisher: Association for Computational Linguistics , Association for Computational Linguistics

Full text available:  [pdf\(796.44 KB\)](#)



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Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

To understand a speaker's turn of a conversation, one needs to segment it into intonational phrases, clean up any speech repairs that might have occurred, and identify discourse markers. In this paper, we argue that these problems must be resolved together, and that they must be resolved early in the processing stream. We put forward a statistical language model that resolves these problem, does POS tagging, and can be used as the language model of a speech recognizer. We find that by accounting ...

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Terms used

statistical decision tree models for parsing for discourse

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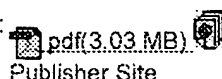
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1 [Speech repairs, intonational phrases, and discourse markers: modeling speakers' utterances in spoken dialogue](#)

Peter A. Heeman, James F. Allen

December 1999 **Computational Linguistics**, Volume 25 Issue 4**Publisher:** MIT Press

Full text available:

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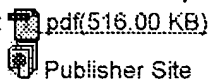
Interactive spoken dialogue provides many new challenges for natural language understanding systems. One of the most critical challenges is simply determining the speaker's intended utterances: both segmenting a speaker's turn into utterances and determining the intended words in each utterance. Even assuming perfect word recognition, the latter problem is complicated by the occurrence of speech repairs, which occur where speakers go back and change (or repeat) something they just said. The word ...

2 [A fully statistical approach to natural language interfaces](#)

Scott Miller, David Stallard, Robert Bobrow, Richard Schwartz

June 1996 **Proceedings of the 34th annual meeting on Association for Computational Linguistics****Publisher:** Association for Computational Linguistics

Full text available:

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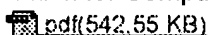
We present a natural language interface system which is based entirely on trained statistical models. The system consists of three stages of processing: parsing, semantic interpretation, and discourse. Each of these stages is modeled as a statistical process. The models are fully integrated, resulting in an end-to-end system that maps input utterances into meaning representation frames.

3 [Statistical language modeling: Towards history-based grammars: using richer models for probabilistic parsing](#)

Ezra Black, Fred Jelinek, John Lafferty, David M. Magerman, Robert Mercer, Salim Roukos

February 1992 **Proceedings of the workshop on Speech and Natural Language HLT '91****Publisher:** Association for Computational Linguistics

Full text available:

Additional Information: [full citation](#), [abstract](#), [references](#)

We describe a generative probabilistic model of natural language, which we call HBG, that takes advantage of detailed linguistic information to resolve ambiguity. HBG incorporates lexical, syntactic, semantic, and structural information from the parse tree into the disambiguation process in a novel way. We use a corpus of bracketed sentences, called a Tree-bank, in combination with decision tree building to tease out the relevant aspects of a parse tree that will determine the correct parse of a ...

4 Intonational boundaries, speech repairs and discourse markers: modeling spoken dialog

Peter A. Heeman, James F. Allen

July 1997 **Proceedings of the 35th annual meeting on Association for Computational Linguistics , Proceedings of the eighth conference on European chapter of the Association for Computational Linguistics**

Publisher: Association for Computational Linguistics , Association for Computational Linguistics

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Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

To understand a speaker's turn of a conversation, one needs to segment it into intonational phrases, clean up any speech repairs that might have occurred, and identify discourse markers. In this paper, we argue that these problems must be resolved together, and that they must be resolved early in the processing stream. We put forward a statistical language model that resolves these problem, does POS tagging, and can be used as the language model of a speech recognizer. We find that by accounting ...

5 Dialogue act modeling for automatic tagging and recognition of conversational speech

Andreas Stolcke, Noah Coccaro, Rebecca Bates, Paul Taylor, Carol Van Ess-Dykema, Klaus Ries, Elizabeth Shriberg, Daniel Jurafsky, Rachel Martin, Marie Meteer

September 2000 **Computational Linguistics**, Volume 26 Issue 3

Publisher: MIT Press

Full text available:



[pdf\(2.53 MB\)](#)



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Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

We describe a statistical approach for modeling dialogue acts in conversational speech, i.e., speech-act-like units such as STATEMENT, QUESTION, BACKCHANNEL, AGREEMENT, DISAGREEMENT, and APOLOGY. Our model detects and predicts dialogue acts based on lexical, collocational, and prosodic cues, as well as on the discourse coherence of the dialogue act sequence. The dialogue model is based on treating the discourse structure of a conversation as a hidden ...

6 Towards history-based grammars: using richer models for probabilistic parsing

Ezra Black, Fred Jelinek, John Lafferty, David M. Magerman, Robert Mercer, Salim Roukos

June 1993 **Proceedings of the 31st annual meeting on Association for Computational Linguistics**

Publisher: Association for Computational Linguistics

Full text available:  [pdf\(546.56 KB\)](#)



[Publisher Site](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

We describe a generative probabilistic model of natural language, which we call HBG, that takes advantage of detailed linguistic information to resolve ambiguity. HBG incorporates lexical, syntactic, semantic, and structural information from the parse tree into the disambiguation process in a novel way. We use a corpus of bracketed sentences, called a Treebank, in combination with decision tree building to tease out the relevant aspects of a parse tree that will determine the correct parse of a ...

7

Discourse segmentation by human and automated means

Rebecca J. Passonneau, Diane J. Litman
 March 1997 **Computational Linguistics**, Volume 23 Issue 1

Publisher: MIT Press

Full text available:  [pdf\(2.71 MB\)](#)  Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)
[Publisher Site](#)

The need to model the relation between discourse structure and linguistic features of utterances is almost universally acknowledged in the literature on discourse. However, there is only weak consensus on what the units of discourse structure are, or the criteria for recognizing and generating them. We present quantitative results of a two-part study using a corpus of spontaneous, narrative monologues. The first part of our paper presents a method for empirically validating multitutterance units ...

8 [An empirically based system for processing definite descriptions](#)

Renata Vieira, Massimo Poesio
 December 2000 **Computational Linguistics**, Volume 26 Issue 4

Publisher: MIT Press


Full text available:  [pdf\(2.94 MB\)](#)  Additional Information: [full citation](#), [abstract](#), [references](#)
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We present an implemented system for processing definite descriptions in arbitrary domains. The design of the system is based on the results of a corpus analysis previously reported, which highlighted the prevalence of discourse-new descriptions in newspaper corpora. The annotated corpus was used to extensively evaluate the proposed techniques for matching definite descriptions with their antecedents, discourse segmentation, recognizing discourse-new descriptions, and suggesting anchors for bridging ...

9 [Applying co-training methods to statistical parsing](#)

Anoop Sarkar
 June 2001 **Second meeting of the North American Chapter of the Association for Computational Linguistics on Language technologies 2001 NAACL '01**

Publisher: Association for Computational Linguistics



Full text available:  [pdf\(117.21 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#)

We propose a novel Co-Training method for statistical parsing. The algorithm takes as input a small corpus (9695 sentences) annotated with parse trees, a dictionary of possible lexicalized structures for each word in the training set and a large pool of unlabeled text. The algorithm iteratively labels the entire data set with parse trees. Using empirical results based on parsing the Wall Street Journal corpus we show that training a statistical parser on the combined labeled and unlabeled data sets ...

10 [Learning methods to combine linguistic indicators: improving aspectual classification and revealing linguistic insights](#)

Eric V. Siegel, Kathleen R. McKeown
 December 2000 **Computational Linguistics**, Volume 26 Issue 4

Publisher: MIT Press

Full text available:  [pdf\(1.96 MB\)](#)  Additional Information: [full citation](#), [abstract](#), [references](#)
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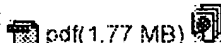
Aspectual classification maps verbs to a small set of primitive categories in order to reason about time. This classification is necessary for interpreting temporal modifiers and assessing temporal relationships, and is therefore a required component for many natural language applications. A verb's aspectual category can be predicted by co-occurrence frequencies between the verb and certain linguistic modifiers. These frequency measures, called linguistic indicators, are chosen by linguistic insights ...

11 A hierarchical stochastic model for automatic prediction of prosodic boundary location

M. Ostendorf, N. Veilleux

March 1994 **Computational Linguistics**, Volume 20 Issue 1**Publisher:** MIT Press

Full text available:

[Publisher Site](#)Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

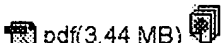
Prosodic phrase structure provides important information for the understanding and naturalness of synthetic speech, and a good model of prosodic phrases has applications in both speech synthesis and speech understanding. This work describes a statistical model of an embedded hierarchy of prosodic phrase structure, motivated by results in linguistic theory. Each level of the hierarchy is modeled as a sequence of subunits at the next level, with the lowest level of the hierarchy representing facts ...

12 Special issue on word sense disambiguation: Introduction to the special issue on word sense disambiguation: the state of the art

Nancy Ide, Jean Véronis

March 1998 **Computational Linguistics**, Volume 24 Issue 1**Publisher:** MIT Press

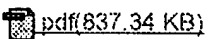
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[Publisher Site](#)Additional Information: [full citation](#), [references](#), [citations](#)**13 The automatic translation of discourse structures**

Daniel Marcu, Lynn Carlson, Maki Watanabe

April 2000 **Proceedings of the first conference on North American chapter of the Association for Computational Linguistics****Publisher:** Morgan Kaufmann Publishers Inc.

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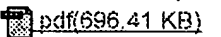
We empirically show that there are significant differences between the discourse structure of Japanese texts and the discourse structure of their corresponding English translations. To improve translation quality, we propose a computational model for rewriting discourse structures. When we train our model on a parallel corpus of manually built Japanese and English discourse structure trees, we learn to rewrite Japanese trees as trees that are closer to the natural English rendering than the original ...

14 Trigger-pair predictors in parsing and tagging

Ezra Black, Andrew Finch, Hideki Kashioka

August 1998 **Proceedings of the 17th international conference on Computational linguistics - Volume 1 , Proceedings of the 36th annual meeting on Association for Computational Linguistics - Volume 1****Publisher:** Association for Computational Linguistics , Association for Computational Linguistics

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In this article, we apply to natural language parsing and tagging the device of trigger-pair predictors, previously employed exclusively within the field of language modelling for speech recognition. Given the task of predicting the correct rule to associate with a parse-tree node, or the correct tag to associate with a word of text, and assuming a particular class of parsing or tagging model, we quantify the information gain realized by taking account of rule or tag trigger-pair predictors, i.e. ...

15**Statistical decision-tree models for parsing**

David M. Magerman

June 1995 **Proceedings of the 33rd annual meeting on Association for Computational Linguistics**

Publisher: Association for Computational Linguistics

Full text available:  [pdf\(718.41 KB\)](#)



[Publisher Site](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

Syntactic natural language parsers have shown themselves to be inadequate for processing highly-ambiguous large-vocabulary text, as is evidenced by their poor performance on domains like the Wall Street Journal, and by the movement away from parsing-based approaches to text-processing in general. In this paper, I describe SPATTER, a statistical parser based on decision-tree learning techniques which constructs a complete parse for every sentence and achieves accuracy rates far better than any pu ...

16 [A decision-based approach to rhetorical parsing](#)

Daniel Marcu

June 1999 **Proceedings of the 37th annual meeting of the Association for Computational Linguistics on Computational Linguistics**

Publisher: Association for Computational Linguistics

Full text available:  [pdf\(715.02 KB\)](#)



Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

We present a shift-reduce rhetorical parsing algorithm that learns to construct rhetorical structures of texts from a corpus of discourse-parse action sequences. The algorithm exploits robust lexical, syntactic, and semantic knowledge sources.

17 [Statistical language modeling: Session summary](#)

Aravind K. Joshi

February 1992 **Proceedings of the workshop on Speech and Natural Language HLT '91**

Publisher: Association for Computational Linguistics

Full text available:  [pdf\(173.86 KB\)](#)



Additional Information: [full citation](#), [abstract](#)

Corpus based Natural Language Processing (NLP) is now a well established paradigm in NLP. The availability of large corpora, often annotated in various way has led to the development of a variety of approaches to statistical language modeling. The papers in this session represent many of these important approaches. I will try to classify these papers along different dimensions, thus providing the reader an overview as well as some understanding of the future directions of the work in this area.

18 [Papers: Using discourse predictions for ambiguity resolution](#)

Yan Qu, Carolyn P. Rosé, Barbara Di Eugenio

August 1996 **Proceedings of the 16th conference on Computational linguistics - Volume 1**

Publisher: Association for Computational Linguistics

Full text available:  [pdf\(592.93 KB\)](#)



Additional Information: [full citation](#), [abstract](#), [references](#)

In this paper we discuss how we apply discourse predictions along with non context-based predictions to the problem of parse disambiguation in Enthusiast, a Spanish-to-English translation system (Woscyna et al., 1993; Suhm et al., 1994; Levin et al., 1995). We discuss extensions to our plan-based discourse processor in order to make this possible. We evaluate those extensions and demonstrate the advantage of exploiting context-based predictions over a purely non context-based approach.

19 [Statistical and learning methods II: Decision tree parsing using a hidden derivation model](#)

F. Jelinek, J. Lafferty, D. Magerman, R. Mercer, A. Ratnaparkhi, S. Roukos
March 1994 **Proceedings of the workshop on Human Language Technology HLT '94**

Publisher: Association for Computational Linguistics

Full text available:  [pdf\(586.81 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#)

Parser development is generally viewed as a primarily linguistic enterprise. A grammarian examines sentences, skillfully extracts the linguistic generalizations evident in the data, and writes grammar rules which cover the language. The grammarian then evaluates the performance of the grammar, and upon analysis of the errors made by the grammar-based parser, carefully refines the rules, repeating this process, typically over a period of several years.

20 Functional centering: grounding referential coherence in information structure

Michael Strube, Udo Hahn

September 1999 **Computational Linguistics**, Volume 25 Issue 3

Publisher: MIT Press

Full text available:  [pdf\(2.51 MB\)](#)  Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)
[Publisher Site](#)

Considering empirical evidence from a free-word-order language (German) we propose a revision of the principles guiding the ordering of discourse entities in the forward-looking center list within the centering model. We claim that grammatical role criteria should be replaced by criteria that reflect the functional information structure of the utterances. These new criteria are based on the distinction between hearer-old and hearer-new discourse entities. We demonstrate that such a functional mo ...

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